

AMENDMENTS TO CLAIMS

The following complete listing of claims replaces all previous claims in the application.

1. (Currently Amended) A method of detecting determining loss of
heterozygosity of acellular DNA from a human subject DNA markers, comprising:

providing a sample containing acellular DNA from a human subject, wherein ~~the~~
~~DNA exists as acellular DNA in the subject~~ the sample is selected from the group
consisting of a blood sample, serum sample and plasma sample; and

comparing detecting one or more DNA markers on the acellular DNA with that on
a control DNA for determination of loss of heterozygosity of the acellular DNA, wherein
the DNA markers are selected from the group consisting of D12S1657, D12S393,
D12S1706, and D12S346, and any combination thereof, ~~wherein said acellular DNA is~~
~~from a blood sample, serum sample or plasma sample.~~

2-5. (Canceled)

6. (Currently Amended) A method of detecting melanoma, comprising:

providing a sample containing acellular DNA from a human subject, wherein ~~the~~
~~DNA exists as acellular DNA in the subject~~ the sample is selected from the group
consisting of a blood sample, serum sample and plasma sample; and

comparing analyzing DNA markers in the 12q22-23 region comprising D12S1657,
D12S393, D12S1706, and D12S346 on the acellular DNA with that on a control DNA for
determination of loss of heterozygosity of the acellular DNA, wherein loss of
heterozygosity of any of D12S1657, D12S393, D12S1706, and D12S346 is indicative of
melanoma, ~~and wherein said acellular DNA is from a blood sample, serum sample or~~
~~plasma sample.~~

7-11. (Canceled)

12. (Previously Presented) The method of claim 6, wherein the melanoma is a primary melanoma.

13. (Previously Presented) The method of claim 6, wherein the melanoma is a metastatic melanoma.

14-25. (Canceled)

26. (Canceled)

27. (Currently Amended) A method of monitoring progression of melanoma, comprising:

providing a blood sample, a serum sample, or a plasma sample containing acellular DNA from a human subject suffering from melanoma, ~~wherein the DNA exists as acellular DNA in the subject;~~ and

comparing ~~analyzing~~ DNA markers comprising D12S1657, D12S393, D12S1706, and D12S346 on the acellular DNA with that on a control DNA for determination of loss of heterozygosity of the acellular DNA, wherein loss of heterozygosity of any of D12S1657, D12S393, D12S1706, and D12S346 indicates the progression of melanoma in said subject.

28-34. (Canceled)

35. (Canceled)

36. (Currently Amended) A method of predicting the efficacy of a melanoma biochemotherapy, comprising:

providing a blood sample, a serum sample, or a plasma sample containing acellular DNA from a human subject suffering from stage IV melanoma prior to

administration of a biochemotherapy, ~~wherein the DNA exists as acellular DNA in the~~
subject; and

comparing analyzing DNA markers comprising D12S1657, D12S393, D12S1706,
and D12S346 on the acellular DNA with that on a control DNA for determination of loss of
heterozygosity of the acellular DNA, wherein loss of heterozygosity of any of D12S1657,
D12S393, D12S1706, and D12S346 indicates poor efficacy of the biochemotherapy in
the subject, and wherein said biochemotherapy comprises dacarbazine, cisplatin,
vinblastin, interferon alpha-2b, IL-2, and tamoxifen.

37-43. (Canceled)

44. (Canceled)

45. (Canceled)

46. (Currently Amended) A method of determining the probability of melanoma
survival, comprising:

providing a blood sample, a serum sample, or a plasma sample containing
acellular DNA from a human subject suffering from a stage III or IV melanoma, ~~wherein~~
~~the DNA exists as acellular DNA in the subject~~; and

comparing analyzing DNA markers comprising D12S1657, D12S393, D12S1706,
and D12S346 on the DNA with that on a control DNA for determination of loss of
heterozygosity of the acellular DNA, wherein loss of heterozygosity of any of D12S1657,
D12S393, D12S1706, and D12S346 indicates that the subject has a low probability of
surviving melanoma.

47-51. (Canceled)

52. (Currently Amended) The method of claim [44] 46, wherein the melanoma is an RLM (regional lymph node metastasis) melanoma.

53. (Currently Amended) The method of claim [44] 46, wherein the melanoma is an ITM (in-transit metastasis) melanoma.

54-57. (Canceled)

58. (Canceled)

59. (Canceled)

60. (Currently Amended) A method of determining the probability of responsiveness to a round of melanoma biochemotherapy, comprising:

providing a blood sample, a serum sample, or a plasma sample containing acellular DNA from a human subject suffering from a stage IV melanoma prior to administration of biochemotherapy, ~~wherein the DNA exists as acellular DNA in the subject~~; and

comparing analyzing DNA markers comprising D12S1657, D12S393, D12S1706, and D12S346 on the acellular DNA with that on a control DNA for determination of loss of heterozygosity of the acellular DNA, wherein loss of heterozygosity of any of D12S1657, D12S393, D12S1706, and D12S346 indicates a low probability of responsiveness to the biochemotherapy in the subject, and wherein said biochemotherapy comprises dacarbazine, cisplatin, vinblastin, interferon alpha-2b, IL-2, and tamoxifen.

61-73. (Canceled)

74. (Canceled)

75-96. (Canceled)

97. (New) The method of claim 1, wherein the DNA markers are further amplified

before the determination of loss of heterozygosity of the acellular DNA, wherein the DNA markers that have lost heterozygosity and the DNA markers that have retained heterozygosity are both amplified.

98. (New) The method of claim 6, wherein the DNA markers are further amplified before the determination of loss of heterozygosity of the acellular DNA, wherein the DNA markers that have lost heterozygosity and the DNA markers that have retained heterozygosity are both amplified.

99. (New) The method of claim 27, wherein the DNA markers are further amplified before the determination of loss of heterozygosity of the acellular DNA, wherein the DNA markers that have lost heterozygosity and the DNA markers that have retained heterozygosity are both amplified.

100. (New) The method of claim 36, wherein the DNA markers are further amplified before the determination of loss of heterozygosity of the acellular DNA, wherein the DNA markers that have lost heterozygosity and the DNA markers that have retained heterozygosity are both amplified.

101. (New) The method of claim 46, wherein the DNA markers are further amplified before the determination of loss of heterozygosity of the acellular DNA, wherein the DNA markers that have lost heterozygosity and the DNA markers that have retained heterozygosity are both amplified.

102. (New) The method of claim 60, wherein the DNA markers are further amplified before the determination of loss of heterozygosity of the acellular DNA, wherein the DNA markers that have lost heterozygosity and the DNA markers that have retained heterozygosity are both amplified.